DOCUMENT RESUME

ED 226 232 CE 035 189

TITLE	National Apprenticeship and Training Standards for Optical Technician (Contact Lens Technician). Revised.
INSTITUTION	Employment and Training Administration (DOL), Washington, DC. Bureau of Apprenticeship and Training.
PUB DATE	82
NOTE	16p.
PUB TYPE	Guides - General (050) -- Legal/Legislative/Regulatory Materials (090)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Allied Health Occupations; *Apprenticeships; *Employment Practices; Federal Legislation; Federal Regulation; *Health Services; Labor Legislation; Labor Standards; *Optometry; Postsecondary Education; Standards
IDENTIFIERS	*Contact Lenses; National Standards; *Optical Technicians

ABSTRACT

These national standards are intended to serve as a guide for the establishment of thorough and complete apprenticeship programs to produce trained optical technicians (contact lens technicians). Covered in the individual sections are the following topics: definitions, qualifications for apprenticeship, credit for previous experience, continuity of employment, apprenticeship agreements, terms of apprenticeship, probationary periods, ratio, responsibilities of apprentices, supervisors, progress evaluation, hours of employment, related technical instruction, certificates of completion, modification of policy, the recommended minimum apprentice wage scale, safety, training and educational objectives, supplemental educational courses, work experience schedules, and related instruction. (MN)

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National Apprenticeship and Training Standards for Optical Technician (Contact Lens Technician)

U.S. Department of Labor
Raymond J. Donovan, Secretary

Employment and Training Administration
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Bureau of Apprenticeship and Training
Revised 1982

CE035189

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STATEMENT OF POLICY

It is a basic policy of the Contact Lens Society of America, Inc., to improve, foster, and promote the welfare of contact lens fitters; to establish proper qualifications for contact lens fitters in regard to character, education, training, and experience; and to set up a code of standards and ethics for the conduct and guidance of contact lens fitters.

Such a policy is the best guarantee of maintaining competent contact lens technicians and professional ethics for the benefit of the public and the referring doctor.

The important objective is to meet the needs of the profession for skilled and competent contact lens technicians. Supervised clinical experience and related instruction supplemented by educational institution courses constitute the hard core of training conducive to career success as a contact lens technician..

It is recognized that the time to acquire these fundamentals in the contact lens field varies with the ability and application of the individual, the type of work for which trained, and the facilities available to each member.

After the required clinical training and related instruction have been mastered according to defined levels of attainment and supplemental educational institution courses have been satisfactorily completed, suitable recognition shall be given apprentices by the appropriate agencies.

The Contact Lens Society of America's Education Committee will maintain a constant surveillance of training problems and new requirements because of the rapid technological changes characteristic of the contact lens field. It will recommend new training criteria, guidelines, and measures of attainment in the apprenticeship program as new conditions dictate to assure the effectiveness of these apprenticeship standards.

NATIONAL APPRENTICESHIP AND TRAINING STANDARDS FOR OPTICAL TECHNICIAN (Contact Lens Technician)

Definitions

1. *Apprentice*—the person who has signed an apprenticeship agreement to learn the occupation outlined in these standards and who is registered with the appropriate registration agency. 1/

2. *Apprenticeship agreement*—the written agreement between an employer and the apprentice in which the terms and conditions of apprenticeship are set forth.

3. *Society*—the Contact Lens Society of America, Inc. For the purpose of this program, the Society's address will be:

167 West Main Street, Suite 301
Lexington, KY 40507

4. *Employer*—any member of the Contact Lens Society of America, Inc., who has facilities and equipment to train apprentices in accordance with the terms and conditions recommended in these national standards.

5. *Local program*—the document under which an employer employs and trains an apprentice in the occupation covered by these national standards.

6. *National Apprenticeship and Training Committee*—the committee directly responsible to the Society for apprenticeship and training. While the Society sets the national policy, the National Committee works to maintain this policy throughout the membership. The adjustment of policy to the needs of the industry and the development of measures of attainment also rest with the Society.

7. *Supervisor of apprenticeship and training*—the individual selected by the employer to organize and administer the local apprenticeship program developed in accordance with these national standards.

8. *Registration agency*—a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, U.S. Department of Labor; or, if no such recognized agency exists in the State, it shall mean the Bureau of Apprenticeship and Training, U.S. Department of Labor.

1/ Local application of these national standards in States having recognized apprenticeship councils may require adaptation to meet the standards of apprenticeship in such States. The staffs of the Bureau of Apprenticeship and Training and the State apprenticeship agencies are available to advise on such standards.

Qualifications for Apprenticeship

1. Applicants to be considered for apprenticeship under local programs shall meet the following minimum requirements:

   a. *Age*—be at least 18 years of age.

   b. *Education*—have successfully completed high school and, in States which license the occupation, have satisfied the minimum educational requirements prescribed by State statute for the licensing of Ophthalmic Dispenser.

   c. *Examination*—satisfactorily pass an aptitude test given by the State employment service. An oral interview will be given by the employer to ascertain desire of applicant to become a Contact Lens Technician.

   d. *Health*—pass required physical examination by a physician selected by the employer.

2. All sponsors of local apprenticeship programs shall include in their programs the following equal opportunity pledge:

> The recruitment, selection, employment, and training of apprentices during their apprenticeship shall be without discrimination because of race, color, religion, national origin, or sex. The sponsor will take affirmative action to provide equal opportunity in apprenticeship and will operate the apprenticeship program as required under title 29 of the Code of Federal Regulations, part 30, as amended.

3. As apprenticeship openings occur, the employer will notify the local schools and the public employment service office on minimum qualifications, dates for applications, and where to apply. Records of the selection process shall be kept by the company for at least 5 years. In lieu of direct notification by the employer to schools and various agencies, the employer may notify the area Bureau of Apprenticeship and Training or State apprenticeship agency servicing the local program of such openings.

4. Each sponsor of an apprenticeship program employing five or more apprentices at one time will be required to adopt a selection procedure and affirmative action plan compatible with title 29, CFR, part 30. These sponsors will make an analysis of the work force of their companies showing the relationship between the ethnic composition of their apprentices and journeymen to the

ethnic composition of the area work force. If the analysis shows underutilization of minorities, the sponsor will then establish goals and timetables designed to correct the deficiency. If no underutilization exists, no additional steps need be taken by the sponsor.

Credit for Previous Experience

1. Persons currently employed by the employer and who qualify for apprenticeship may be classified as apprentices under local programs with appropriate credit allowed on the term of apprenticeship for their previous training and experience, and such persons will be registered with the registration agency as apprentices.

2. Applicants selected for apprenticeship who have been employed elsewhere in the ophthalmic industry may be granted credit on the term of apprenticeship (commensurate with their past experience) after their records have been checked and evaluated by the employer.

3. To ascertain the extent of knowledge and previous work experience of the applicant, the employer will give a written, oral and/or practical examination which will cover work experience and subjects related to the trade.

4. An apprentice given credit on the term of apprenticeship for previous experience shall be paid upon entrance the wage rate of the period to which such credit entitles him.

Continuity of Employment

Apprentices shall be given continuous employment insofar as possible. In the event of a reduction in force, all furloughed apprentices will be given an opportunity to return to their apprenticeship before new apprentices are hired.

Apprenticeship Agreement [2/]

1. Each apprentice (and the parent or guardian, if the apprentice is a minor) and the employer shall sign an apprenticeship agreement which shall be registered with the registration agency. Copies of the apprenticeship agreement will be given to the apprentice, the employer, and to the registration agency.

2. Each apprenticeship agreement shall contain a statement making the terms and conditions of the local program a part of the

2/ Some State apprenticeship agencies require the use of their own apprenticeship agreement forms. In such instances, the agreement forms may be obtained from the staff of the State agency or the Bureau of Apprenticeship and Training.

agreement, a schedule of work processes and wage rates, and a statement that the apprentice will receive related technical instruction during the period of apprenticeship.

3. The employer shall notify the registration agency of all apprentice actions, including terminations, suspensions, and completions of apprenticeship.

Term of Apprenticeship

1. The term of apprenticeship shall be 2 years (4,000 hours) and shall include a minimum of 150 hours per year of related instruction.

2. Apprentices who work in excess of the normal workday or workweek (overtime) shall receive credit on the term of apprenticeship only for the actual number of hours or days worked.

3. An apprentice whose progress is rapid, due to unusual aptitude and industry or because of past educational experience, and who achieves the desired level of attainment for a designated period of the apprenticeship, may be advanced to the next phase sooner than the stipulated period of time. When such advancement is made, the apprentice shall be paid the rate of the period to which advanced.

Probationary Period

1. Apprentices under local programs shall be in probationary status during the first 3 months (500 hours) of apprenticeship unless a different period of probation is stipulated by State apprenticeship agency regulation or law.

2. An apprentice who does not demonstrate aptitude or interest for the occupation during the probationary period may be canceled from the program by the employer. Apprentices may also cancel the agreement during the probationary period, if they do not like apprenticeship or have personal reasons for canceling.

3. Apprentices will be subject to cancellation from the program by the employer at any time for infractions of company rules and policies, or for failure of the apprentice to meet the required standards of proficiency.

Ratio

The ratio of apprentices to journeymen employed under local programs shall be based on the employer's anticipated need for journeymen. One (1) apprentice may be employed provided a

journeyman is also employed. In addition, one (1) apprentice may be employed for each additional three (3) journeymen employed.

Responsibilities of Apprentices

1. It shall be the duty of the employer to impress upon all apprentices that they have voluntarily agreed to abide by the provisions of the local programs and, therefore, they assume the responsibilities and obligations established under the apprenticeship agreement.

2. Apprentices shall perform diligently and faithfully the work of the trade and such duties as are assigned them by the employer.

3. They shall respect the property of the customer, employer, and fellow employees and abide by the working rules and regulations of the employer.

4. They shall attend regularly and complete satisfactorily the required related technical instruction and supplemental courses as stipulated in the local program

Supervisor of Apprentices

The employer shall designate a supervisor of apprentices to assure close supervision of the apprentice, proper instruction, and job rotation to provide the apprentice complete training.

Progress Evaluation of Apprentices

The employer or the designated supervisor of apprentices under the local program shall make an evaluation of the progress of apprentices periodically during the term of apprenticeship. The evaluation shall cover both on-the-job training and related technical instruction. If apprentices fail to show progress, they may be required to repeat a specific process; if they continue to show no progress, their apprenticeship agreements may be canceled. Adequate records shall be maintained by the supervisor of apprentices to substantiate progress.

Hours of Employment

The workday and workweek for apprentices under local programs shall be the same as for journeymen and subject to the same conditions. The apprentice shall work under the immediate direction of a contact lens technician (journeyman).

Related Technical Instruction

1. All apprentices shall be required to complete related technical instruction assignments from material furnished by the employer or a local educational institution when available. A minimum of 150 hours of such instruction each year of apprenticeship is considered necessary.

2. The time spent by apprentices in related instruction given by the employer during the regular workday shall be classed as hours of work and apprentices will receive their normal hourly compensation for this time. Such hours will be counted toward the term of apprenticeship.

3. The time spent by apprentices at local educational institutions or in home-study courses outside the regular work hours shall not be considered as hours of work nor counted toward the term of apprenticeship.

4. In cases of failure on the part of apprentices to fulfill their obligations with respect to related instruction, the level of progress, attendance, or deportment, the employer may withhold periodic wage advancements or suspend or cancel their apprenticeship agreements.

5. The employer will arrange, whenever possible, to integrate on-the-job training with related technical instruction so that apprentices receive maximum benefit from such instruction.

Certificate of Completion of Apprenticeship

When an apprentice has satisfactorily completed all of the requirements of the local program, the employer shall notify the registration agency and request that a Certificate of Completion of Apprenticeship be issued to the apprentice.

Modification of Policy

1. These national standards of apprenticeship may be modified at any time by the Contact Lens Society of America, Inc. Such modification shall be submitted to the Bureau of Apprenticeship and Training, U.S. Department of Labor for approval.

2. No modification or change in these national standards shall affect local programs currently in effect. Local programs may be subsequently modified to affect changes in national standards through modification procedures with the registration agency.

Recommended Minimum Apprentice Wage Scale

1. All apprentices under the local programs will be paid a specific progressively increasing wage. Wage scales will be determined by each employer.

2. As the local standards for each employer are submitted to the registration agency for registration, a minimum wage scale will be included for each trade classification covering the periods of the term of apprenticeship. This wage scale must be in compliance with State and Federal requirements. It is recommended that the wage increases be scheduled at 1,000-hour intervals.

3. Suggested rates of pay based on the journeyman's hourly wage rate:

1st 1,000 hours 50% per hour
2d 1,000 hours 60% per hour
3d 1,000 hours 75% per hour
4th 1,000 hours 90% per hour
Journeyman hourly rate thereafter.

Safety

Apprentices will be provided with initial indoctrination and instruction in order to enable them to perform their duties in a safe manner. Such indoctrination shall include instructions on safety regulations, reporting of accidents, and availability of first aid medical facilities.

Training and Educational Objectives

During the term of apprenticeship, the apprentice shall be given such instruction and experience as necessary to develop the skills and knowledge characterizing a qualified and competent contact lens technician.

At the end of the first year, the apprentice should be able to:

1. Use terminology germane to the field of optics.
2. Use equipment or understand procedures for manufacturing spherical corneal contact lenses on a written order--selections of appropriate plastic; calculations; generate and polish central posterior curves; and generate and polish anterior curves to a specified thickness.
3. Demonstrate an understanding of the technical operations

of manufacturing and of testing equipment utilized for all types of contact lenses including care and maintenance of the equipment.

4. Test and check all types of finished contact lenses.
5. Carry out any commonly used procedures for finishing uncut lenses including modification of patient's lenses.
6. Diagram orbital anatomy with special references to the anterior portion of the globe and the lids.
7. Explain and diagram principles of physiologic optics including developmental vision to explain the effect of lenses on visual deviation. Also understand the therapeutic value of contact lenses.
8. Demonstrate facility in the delivery of all types of contact lenses to patients and give competent instructions.

At the end of the third period, the apprentice should be able to:

1. Use terminology germane to the field of contact lenses.
2. Explain relevant terms so that another contact lens technician student can use them appropriately when discussing a patient.
3. Demonstrate acceptable ability in the use of common instruments and equipment used during the fitting procedures with accent on topographical keratotometry, slit lamp evaluation of lens fit, fitting lenses, and lens adjusting equipment.
4. List or describe principles of contact lens fitting as they relate to ophthalmic dispensing.
5. Predict and identify the effect of contact lens fitting anomalies.
6. List the potential problems of contact lenses and how they may be minimized.
7. Understand developmental abnormalities, anomalies of the eye and related structures, meaning of visual symptoms, and diseases of the eye.
8. Understand the function of normal vision and sensory physiological adaptation in the wearer citing primarily

basic approaches, points of assumption, and unexplained inconsistencies.

At the completion of training, the apprentice should be able to:

1. When confronted with any ophthalmologist's contact lens patient--

   a. Carry out evaluating studies, classify and outline a corrective fitting approach which should include type of lens, patient management, custom designing and fitting of lens, followup care, records, and an ophthalmological contact lens technician relationship.

   b. List the probable results in terms of vision binocular and monocular functions, physiological functions and cosmetics, including time and approximate cost of services.

2. Carry out any commonly used fitting procedures utilizing both scleral- and corneal-type contact lenses.

3. List the potential problems of contact lenses and how they may be minimized. Further, the apprentice should be able to isolate, identify, and take appropriate steps to correct existing problems.

4. Utilize contact lens fitting equipment and techniques at a level that demonstrates an understanding of technical operations (for example, slit lamp, topographical keratometry and molding procedures).

5. Explain the potential value of a contact lens technician fitting contact lenses so that an ophthalmologist unfamiliar with a contact lens technician can choose whether or not he desires to use a technician for referral of his contact lens patients.

6. Demonstrate adequate technical knowledge of developmental abnormalities of the eye and related structures, meaning of visual symptoms, and diseases of the eye.

7. Describe the varying management techniques, philosophies, and procedures employed by contact lens centers and geographic areas in this country and abroad.

It is to be expected that the approach in learning and demonstrating the above skills will be clinically oriented especially in the second year. It is further expected that the apprentice will attend regularly offered educational programs sponsored by the Society in addition to supplemental educational courses.

Upon completion of the apprenticeship program, it is to be expected that the apprentice will also be prepared to pass a State board examination for licensure as an ophthalmic dispenser when trained in those States so licensed and also pass the written and practical "Fellow Member" examination conducted by the Society.

Supplemental Educational Courses

During the term of apprenticeship, the apprentices shall be required to attend and satisfactorily pass formal educational courses in subjects related to their occupation. When such subjects are not conveniently available, other appropriate courses shall be taken which will aid in their training.

The courses shall include:

1. *Anatomy and Physiology*. Functional anatomy and physiology of the eye and related structures.

2. *Physiologic Optics*. The mechanism of vision and the physiology and psychology of the visual process including developmental vision and visual deficiencies.

3. *Ophthalmic Anomalies*. Embryology of the eye including developmental abnormalities, anomalies of the eye and related structures, meaning of visual symptoms, and diseases of the eye.

4. *Ophthalmic Optics*. Nature and properties of light and the designing of ophthalmic lenses with emphasis on their application to visual problems and the application of ophthalmic instruments and equipment.

5. *Ophthalmic Dispensing*. Application of the optical and technical principles to the designing, verifying fitting, adapting, and adjusting of ophthalmic corrections and devices.

Work-Experience Schedules

The training of apprentices shall include the following on-the-job work experience and training but not necessarily in the sequence shown:

Hours

1. General Shop Laboratory Training 600
   a. Radiuscope measurements
   b. Lensometer measurements
   c. Shadowgraph and optical bench
   d. Measuring gages
   e. Finishing uncut corneal lenses
   f. Modifying finished corneal lenses
   g. Modifying scleral lenses
   h. Topographical keratotometry familiarization
   i. Slit lamp familiarization
   j. Inside and outside lathe
   k. Lens polishing

2. Ophthalmic Dispensing Practice--Fitting of Eyeglasses. . 600
   a. Prescription interpretation
   b. Measurement for fitting
   c. Lens-type selection
   d. Lens designing
   e. Adjusting eyeglasses

3. Patient Indoctrination on Delivery of Contact Lenses . . 600
   Includes hygienic procedures, blinking exercises, insertion, removal, and recentering techniques, wearing schedules, solutions, symptoms, and care.

4. Scleral-Type Lens. 100
   Includes making negative mold, design, modifications, and special fitting problems (keratoconic eye, cosmetic shell, etc.).

5. Fitting Corneal-Type Lens 1,000
   a. Interpreting physician's prescription.
   b. History and orientation of patient.
   c. Keeping accurate records.
   d. Determining lens design utilizing topographical keratotometry, slit lamp biomicroscopy, fluorescein and fitting lens studies as indicated.
   e. Ordering lenses and verifying lens specifications.
   f. Followup and aftercare service.
   g. Determining and making necessary adjustments as needed.

		Hours
6.	Special Fitting	600
	a. Keratoconus	
	b. High myopia	
	c. Hydrophilic lens	
	d. Cosmetic iris lens	
	e. Aphakia	
	f. Infant fittings	
	g. Consultations on problem cases	
	h. Hospital operating room fittings	
7.	Artificial Eye	250
	Includes custom-made artificial eye fittings, aftercare, hygienic procedures, and service.	
8.	Administrative Work	250
	Includes office management of purchasing, correspondence, fee schedules, appointments, etc.	
	Total	4,000 hours

Related Instruction

The Education Committee of the Contact Lens Society of America, Inc., and the Bureau of Apprenticeship and Training, U.S. Department of Labor have developed a related instruction program consisting of 300 hours of training for a contact lens technician apprentice.